DRAWING BOUNDARIES

CONNECT PLANS PRODUCTION PROCESSES USING MICROSTATION CONNECT

TOPICS

- **Civil Drawing Boundaries and Non-civil Drawing Boundaries** - create plan sheets along an alignment or a path.
- **Managing Named Boundaries** – edit properties or move.
- **When to use Civil Plan versus From Drawing Boundary**
- **Unusual Scales**

WHAT ARE DRAWING BOUNDARY SEEDS?

- Models – drawing-type and sheet-type.
- Sheet model seeds have four (4) elements in each:
  - Border cell
  - Title block cell
  - Sheet Number cell
  - Bordernotes or Borderfull cell (construction class)
- Civil drawing boundaries are placed relative to an alignment location and stationing values
- Non-civil drawing boundaries are placed related to an XY location

Drawing Boundary Seeds are delivered in a design library. Create Drawing command uses drawing boundary seeds to automate creating sheets, attaching references, and clipping, scaling and rotating reference attachments.
Elements are delivered in the seeds because it is easier and faster to delete or turn off what you don't want.

WHY NOT JUST PLACE A NAMED FENCE?

When the drawing boundary is used to create a drawing - that's where the difference and efficiencies come out to play!

The drawing boundary seed sets:

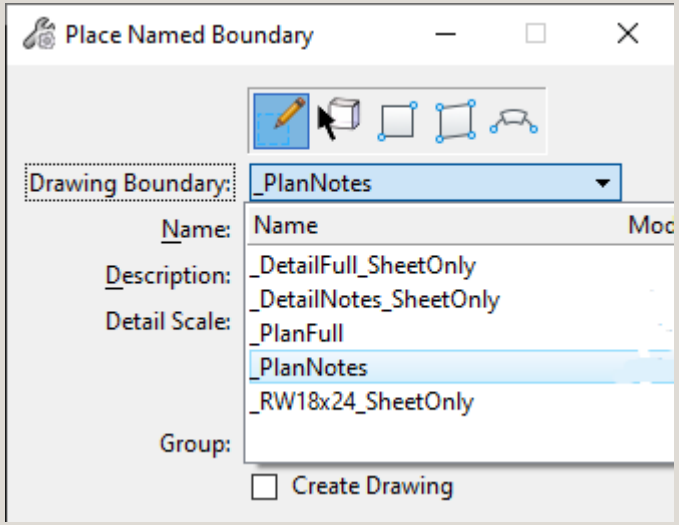
- which models to use in the drawing creation,
- the detail scale of the sheet,
- the orientation of the sheet,
- the annotation scale of the drawing model,

And create drawing will automatically create models for multiple sheet and attach the source graphics as a clipped and rotated references!

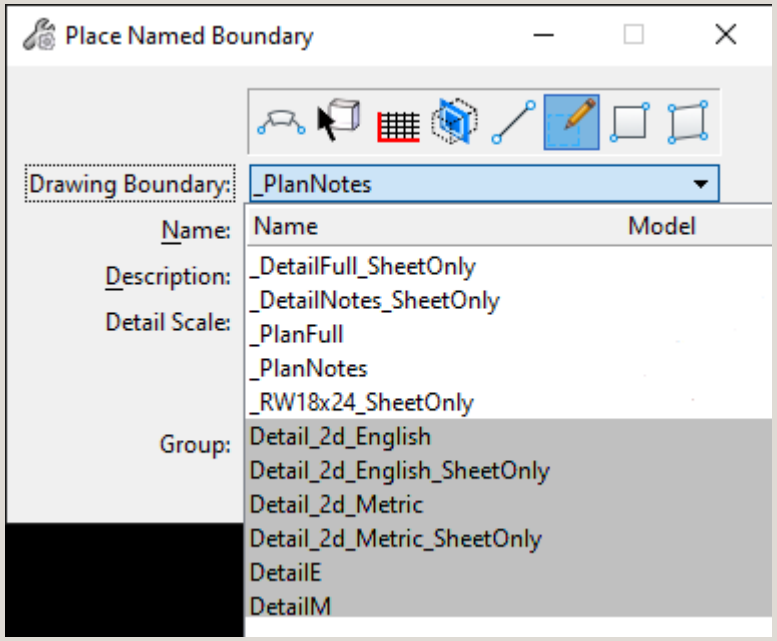
A drawing boundary seed creates an intelligent, permanent fence. When used to create drawings, the drawing boundary acts as the view port or clip boundary.

NON-CIVIL DRAWING BOUNDARY SEEDS

- MicroStation CONNECT

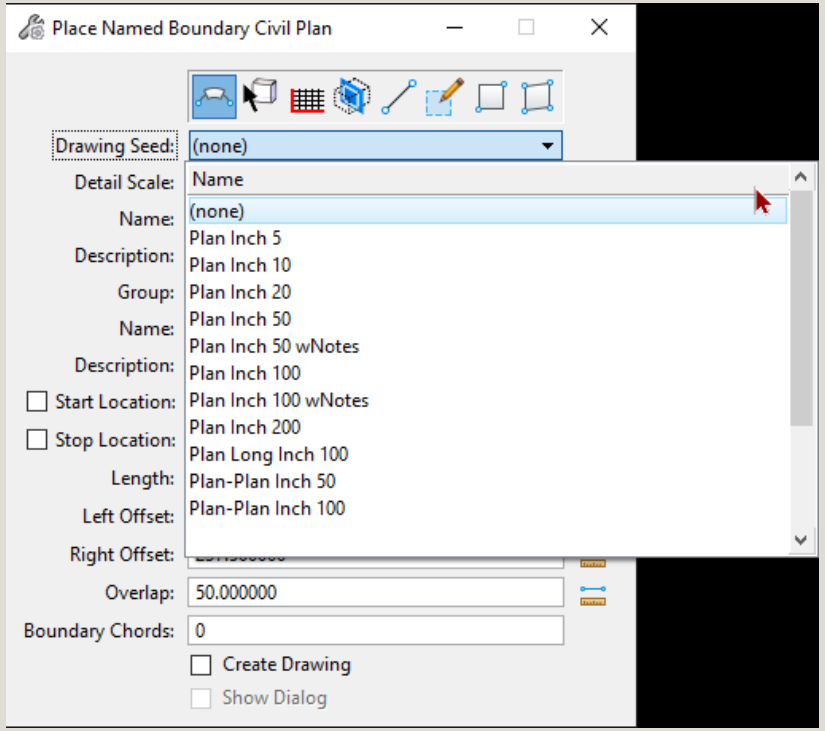


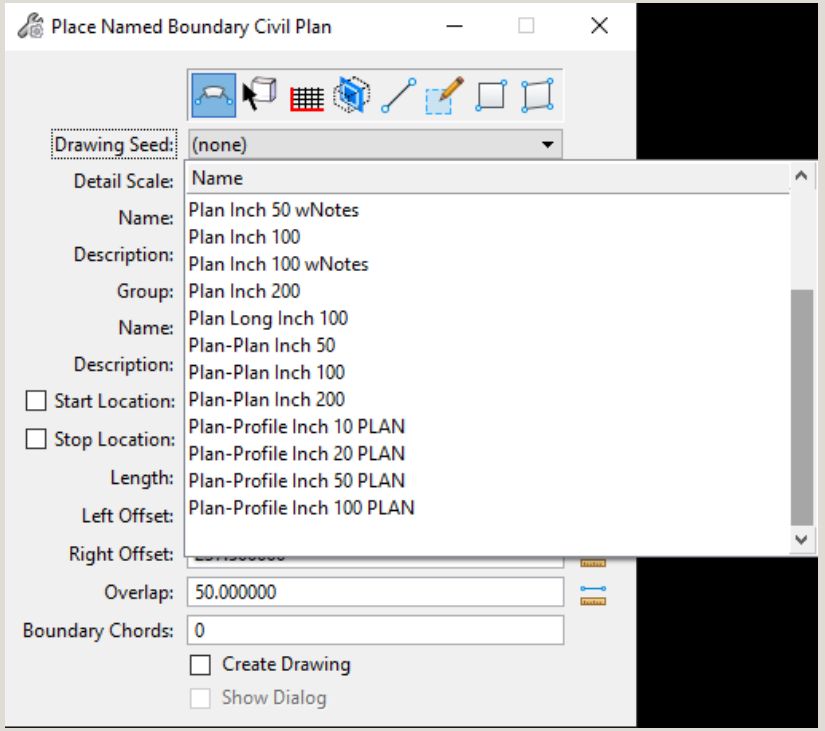
- Non-civil in OpenRoads Designer



When the type of boundary is set to "From Drawing Boundary", both MSCE and ORD provide the same list of five (5) ODOT non-civil drawing boundary seeds. ODOT seed names begin with an underscore so that ODOT boundary seeds sort to the top of the list. Don't use boundary seeds that don't have an underscore in the name.

"CIVIL PLAN" DRAWING BOUNDARY SEEDS

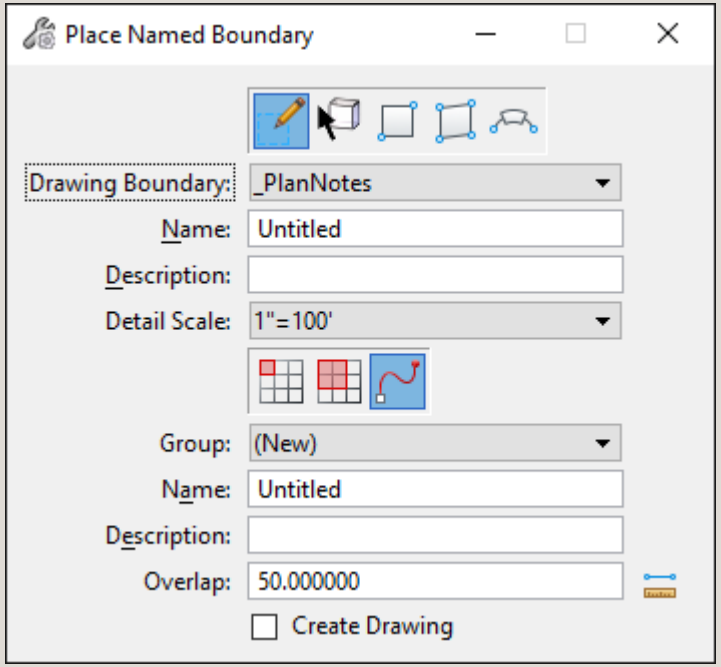




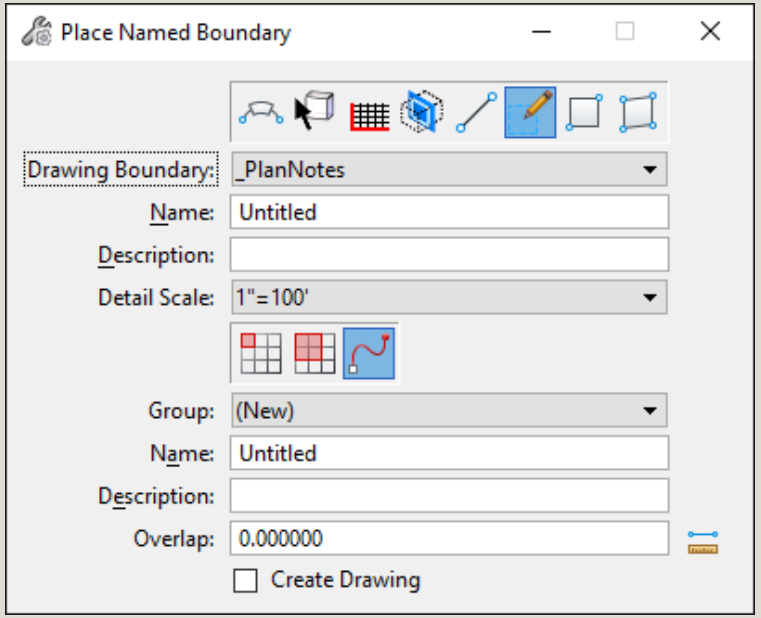
When the type of boundary is set to "Civil Plan" in ORD, the drawing boundary seed list is more than one page long! Use the scroll bar. You will see

TYPE = FROM DRAWING BOUNDARY (non-civil)

- MicroStation CONNECT



- OpenRoads Designer

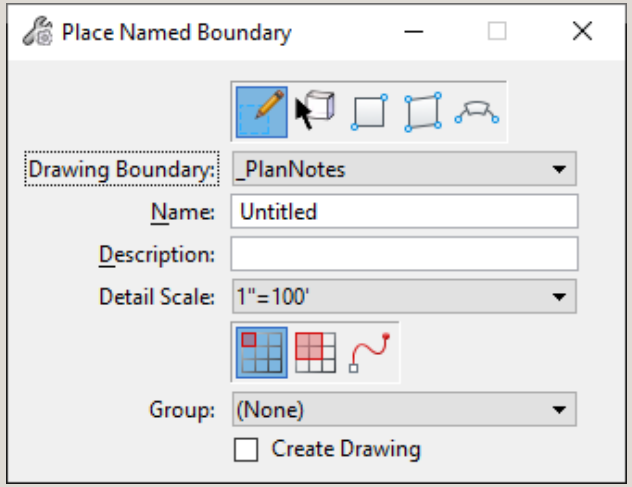


The top row of icons sets the type of boundary. The most commonly used type of **non-civil** drawing boundary for both MSCE and ORD is "From Drawing Boundary". Non-civil drawing boundaries do not have a scale in the name.

SINGLE , GRID OR ARRAY METHOD (non-civil)

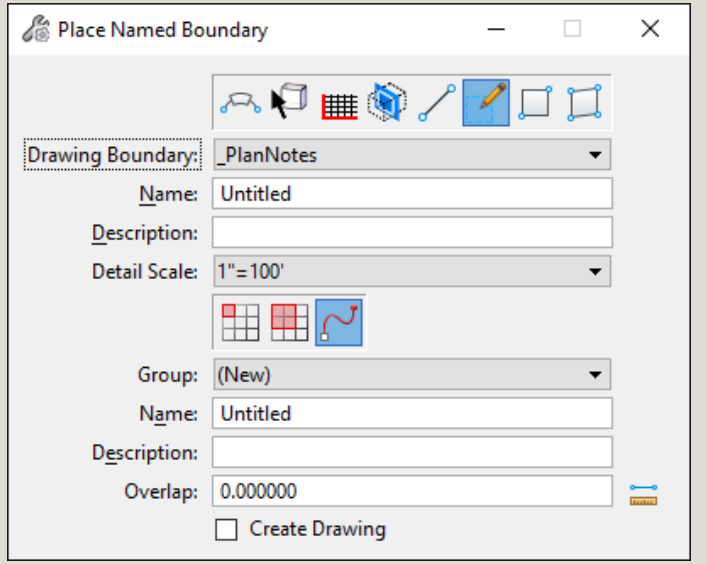
SINGLE

- Detail
- Single sheet sketch



ARRAY

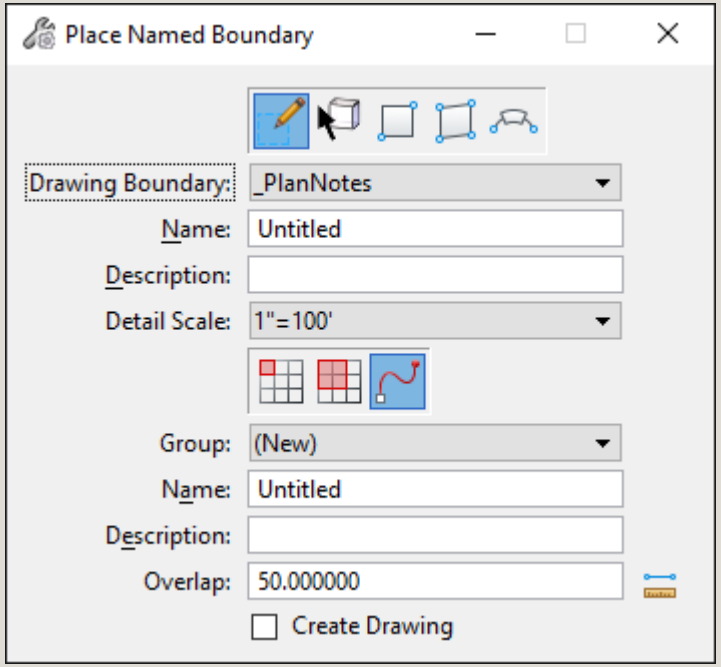
- More than one boundary "along a path"



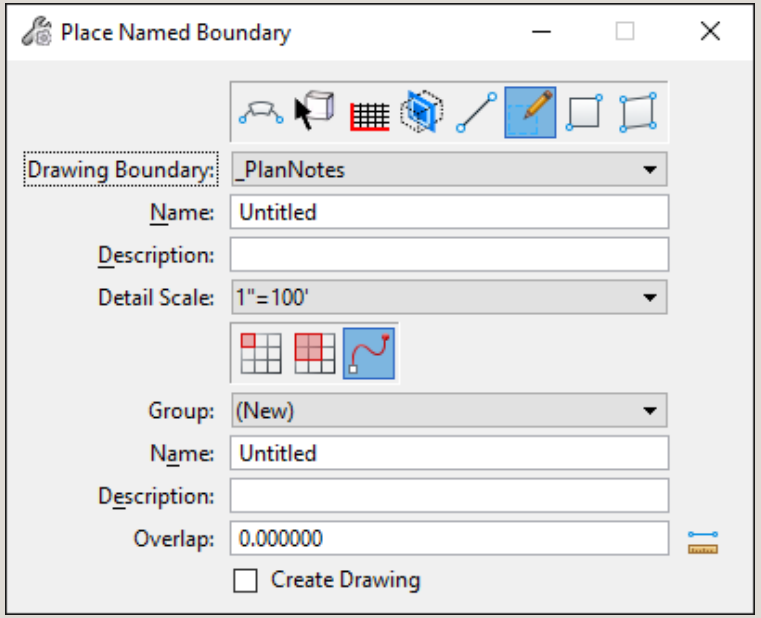
Only two methods are routinely used: Single and Array. Array is useful when working in plan view and there is a path along which you wish to cut sheets.
An OpenRoads Designer dialog is shown on the right with more types of named boundaries at the top.

ALONG A PATH – ARRAY (non-civil)

- MicroStation CONNECT



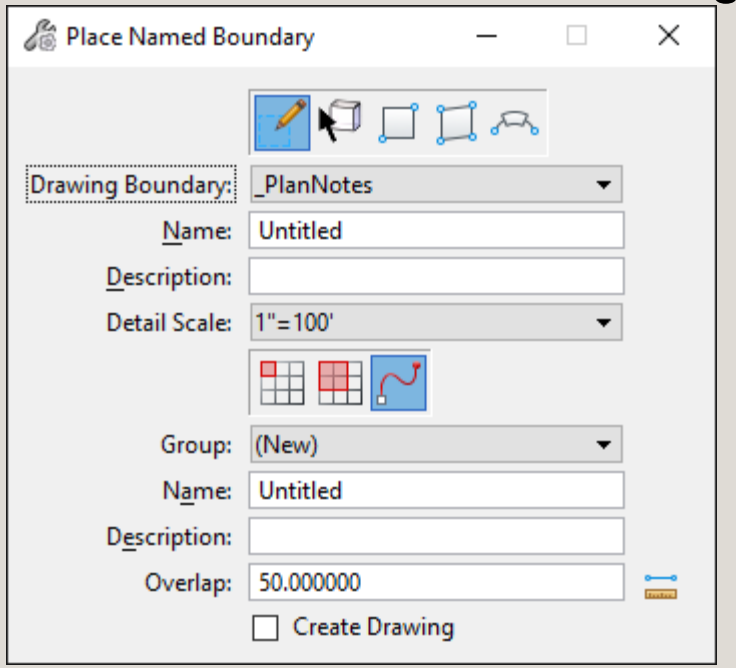
- OpenRoads Designer



Both MSCE and ORD can place a **non-civil** drawing boundary "Along a Path". "Path" is a generic term and could mean a complex chain drawn using MicroStation or a civil geometry (alignment) that is displayed as a reference.
The MicroStation dialog on the left looks almost the same as the OpenRoads Designer dialog on the right.

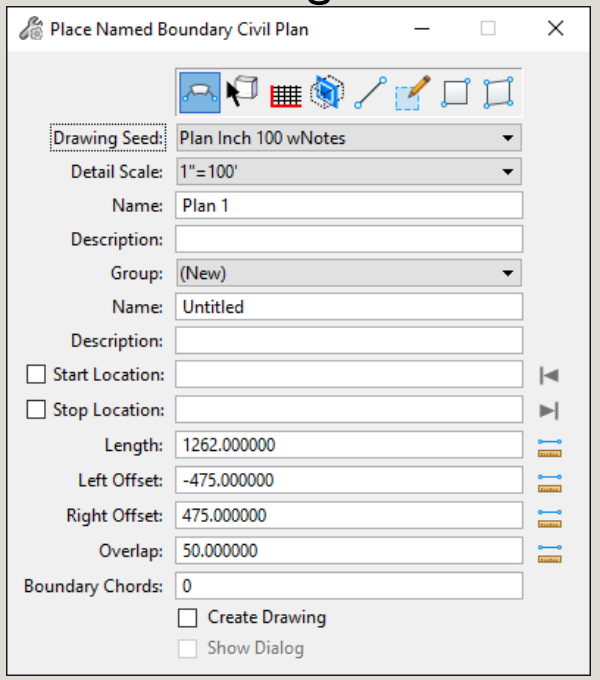
ALONG A PATH ≈ CIVIL PLAN

- MicroStation CONNECT – Along a Path



Place Named Boundary By Drawing Boundary > Identify Path Element at Start point

- OpenRoads Designer – Civil Plan



Place Named Boundary Civil Plan > Identify Path Element

OpenRoads Designer Place Named Boundary tool is shown on the right with Civil Plan tool selected. MSCE (on the left) is set to use "From Drawing Boundary" tool with the method of "Along Path". Check out the similarities: you get to select the path or geometry and the sheet overlap can be adjusted.

HOW BOUNDARIES ALONG A PATH ARE PLACED

Leading boundary edge placed at start location (- ½ overlap) – green x is start location

Midpoint of leading boundary edge intersects the path

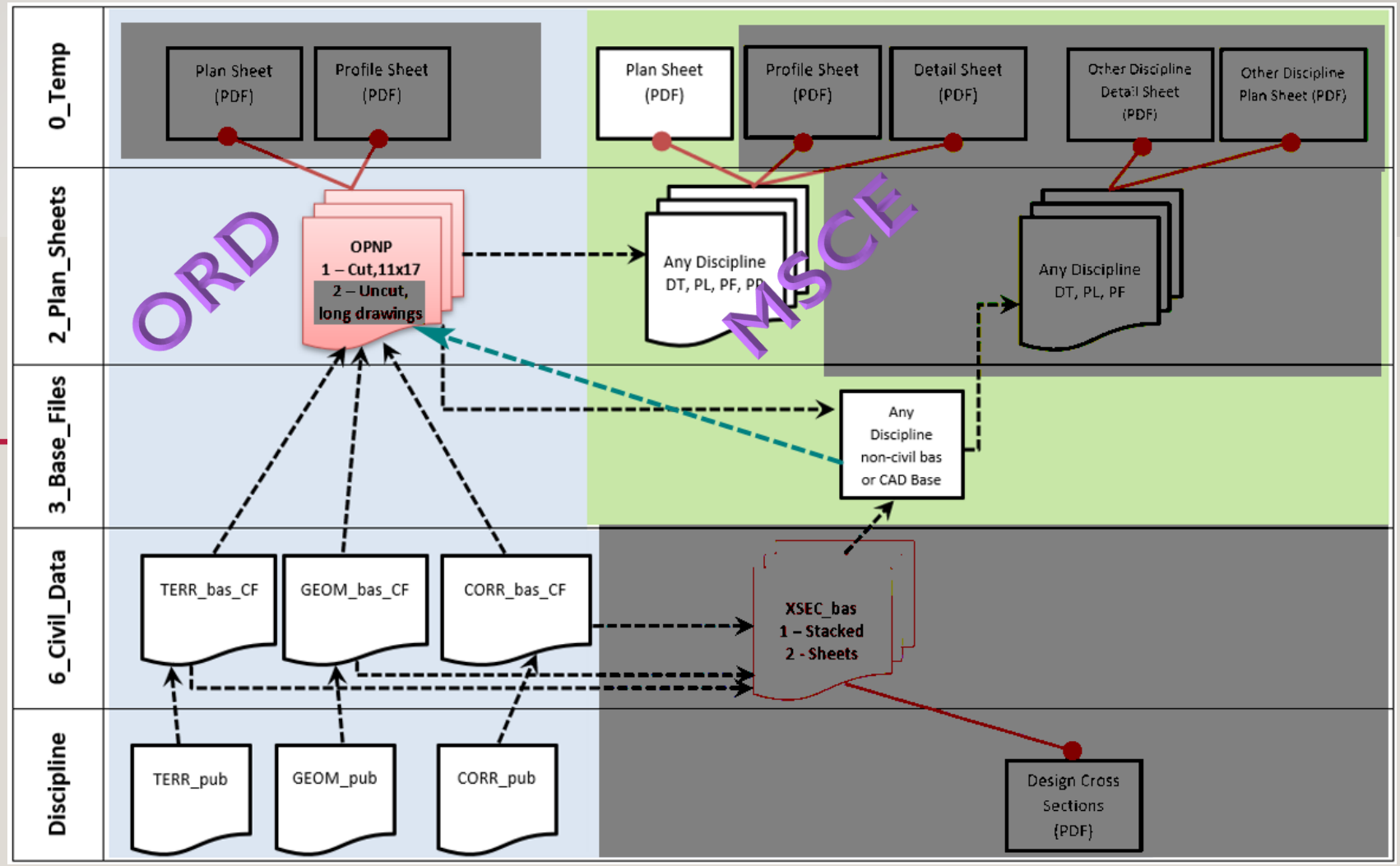
Midpoint of trailing boundary edge intersects the path

100% of overlap between sheets on path

Boundary edges are only perpendicular to path if no curve within the boundary of the sheet.

DEMO

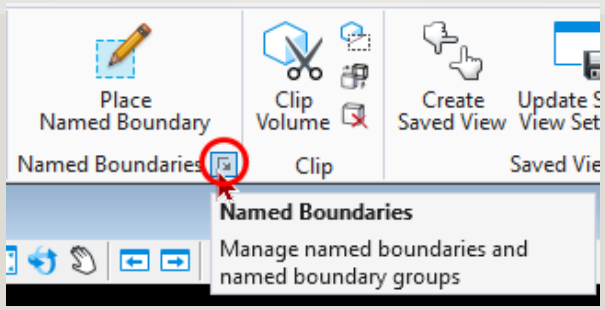
Use ORD in OPNP file; attach reference to CAD Base file; attach references to Container Files; place Civil Plan named boundaries that match preliminary cuts

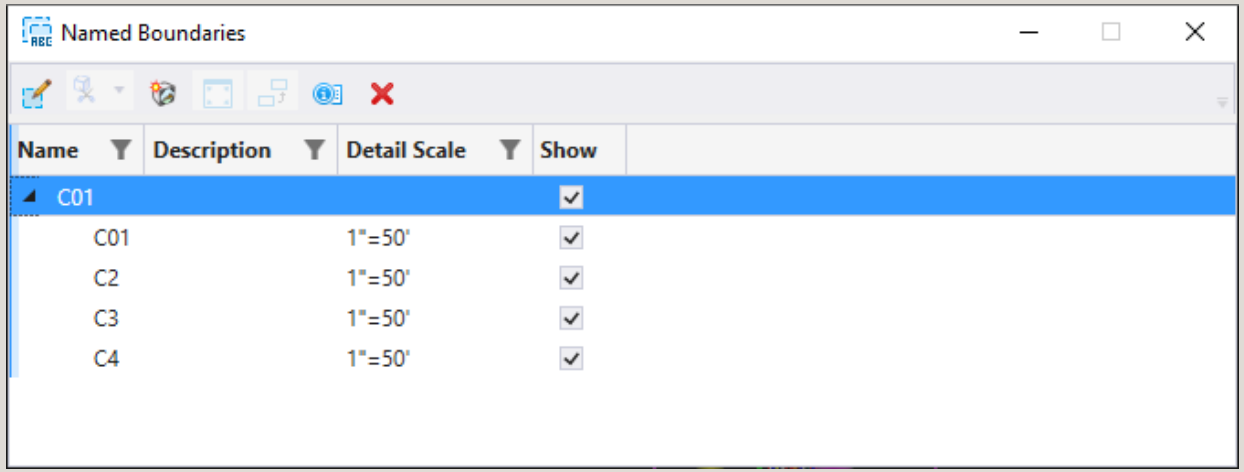


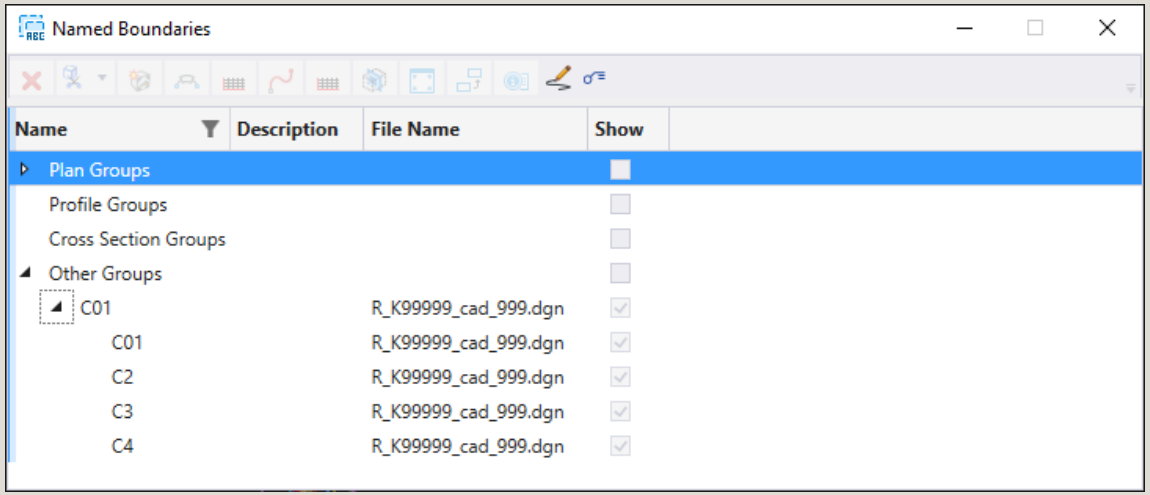
TOPICS

- ☑ **Civil Drawing Boundaries and Non-civil Drawing Boundaries** - create plan sheets along an alignment or a path.
- **Managing Named Boundaries** – edit properties or move.
- **When to use Civil Plan versus From Drawing Boundary**
- **Unusual Scales**

MANAGING NAMED BOUNDARIES

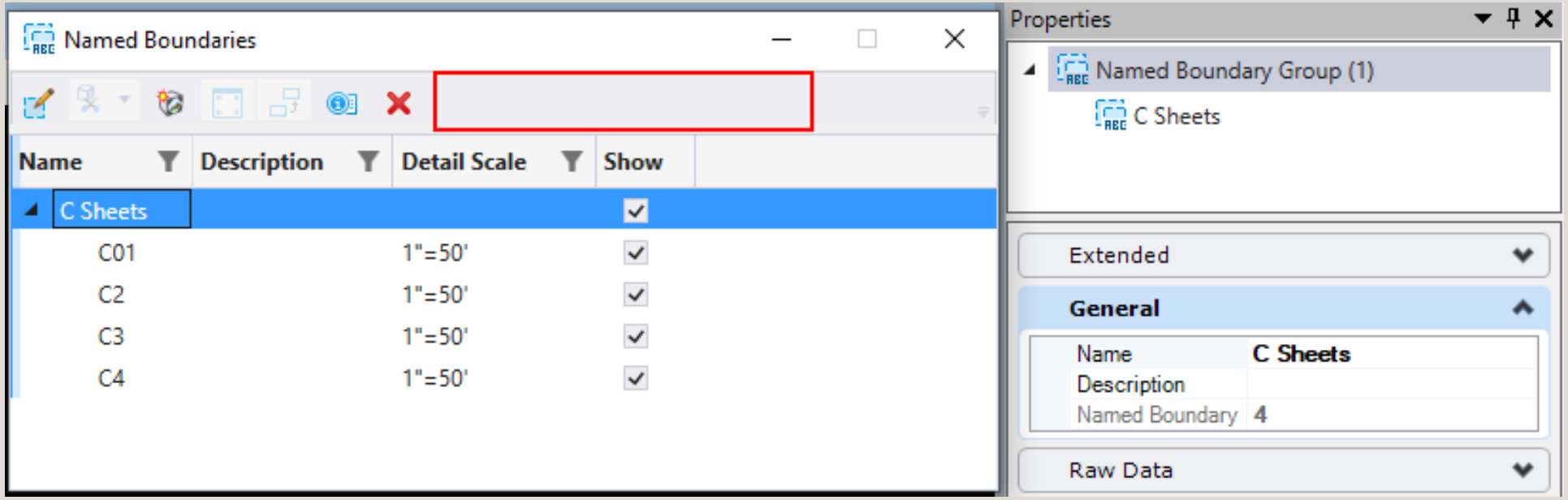






Named boundaries are stored in the model in which they are created. ORD organizes the groups by the type of named boundary. Boundaries created by MSCE are "Other Groups".

EDITING NAMED BOUNDARIES - MICROSTATION

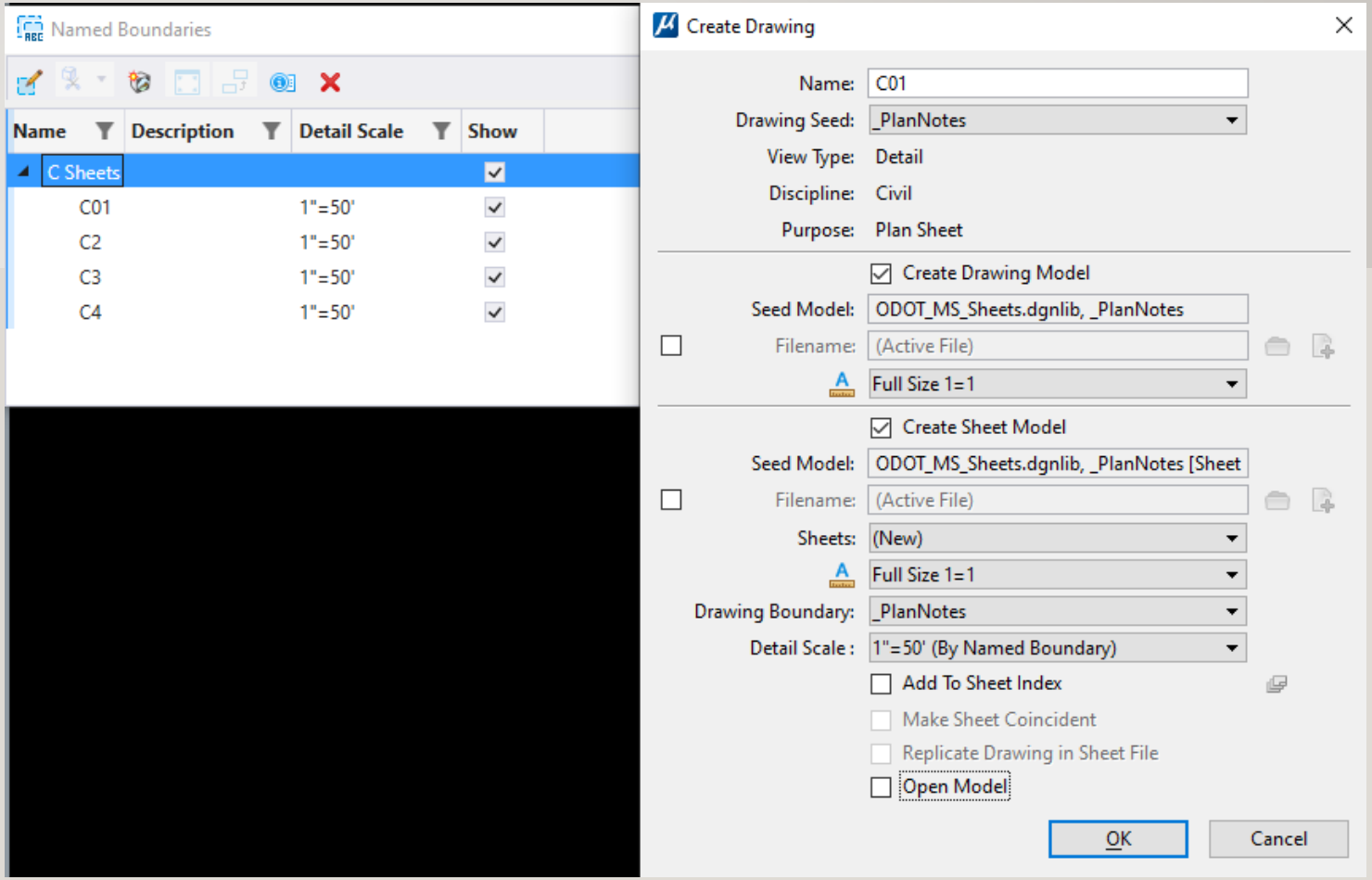


Best Practice is to make edits in the Properties dialog. Must close and reopen the Named Boundaries dialog to see changes. You can edit in the Named Boundaries dialog using a slow double-click.
Note – There's no pencil icon to make the Create Drawing dialog show – it's automatic in MicroStation!

EDITING NAMED BOUNDARIES – MICROSTATION

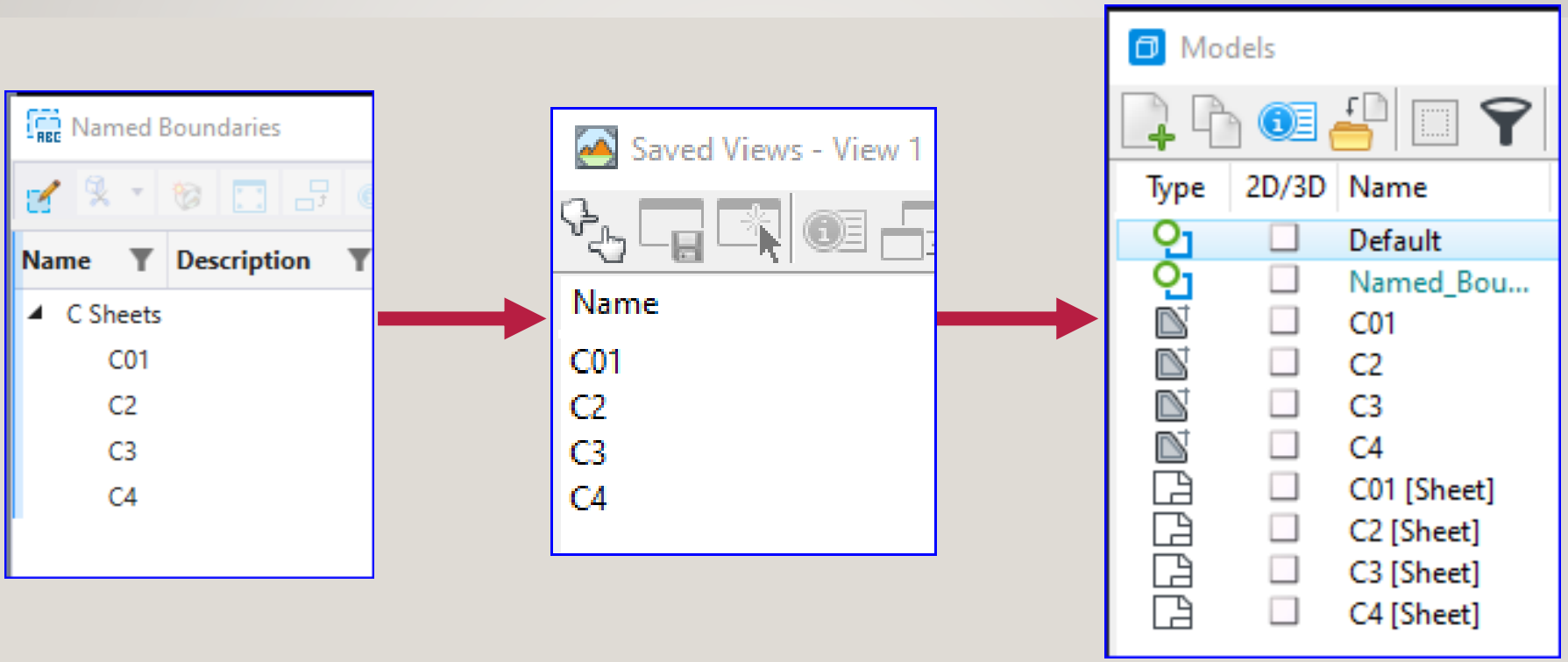
Why bother to edit the names of named boundaries?

- Models will be created with names using the Named Boundary names



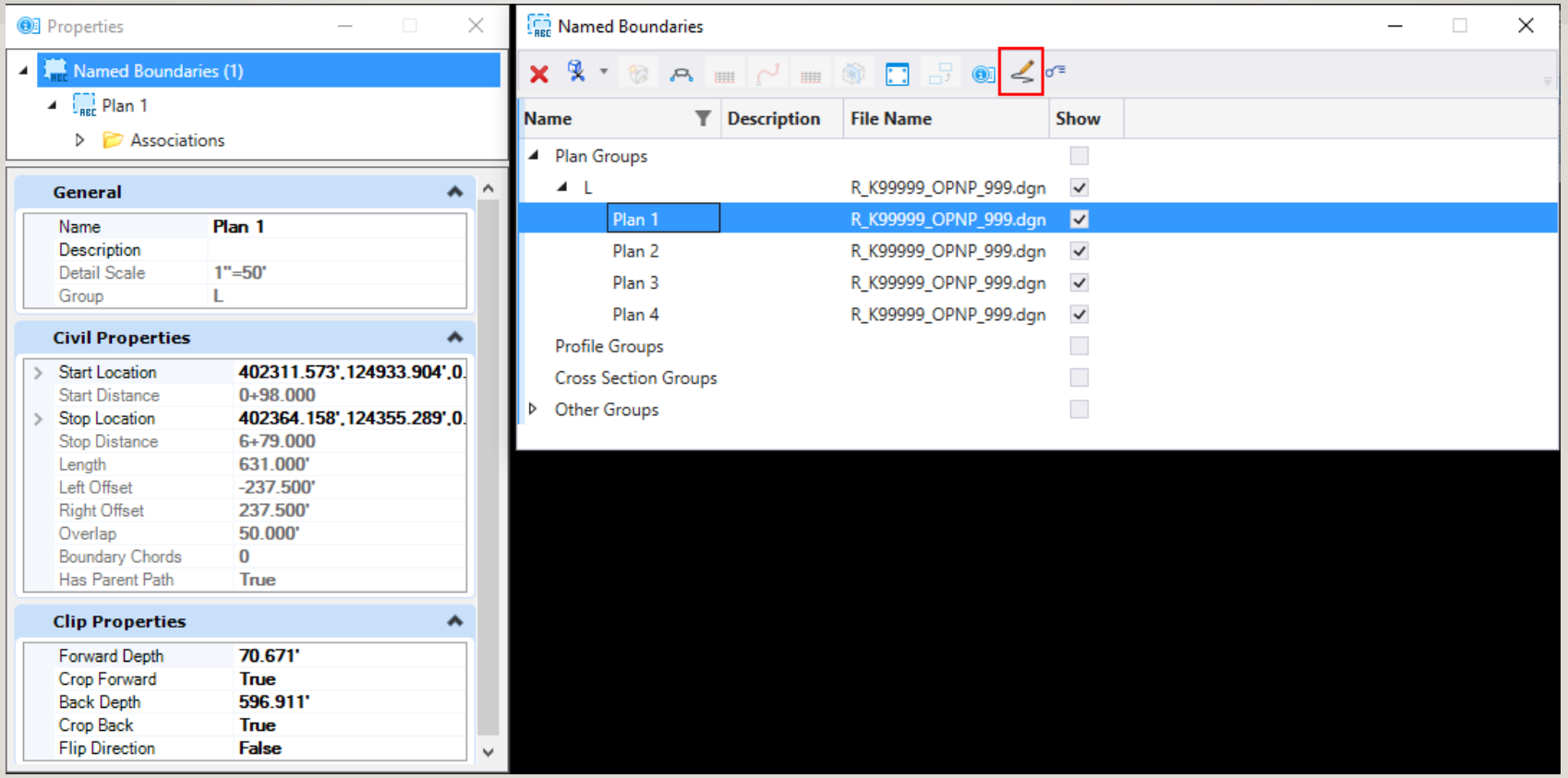
Create Drawing dialog is filled out by the drawing boundary seed.

EDITING NAMED BOUNDARIES - MICROSTATION



Named boundary names = Saved View names = Model name seed.

EDITING NAMED BOUNDARIES – OPENROADS DESIGNER



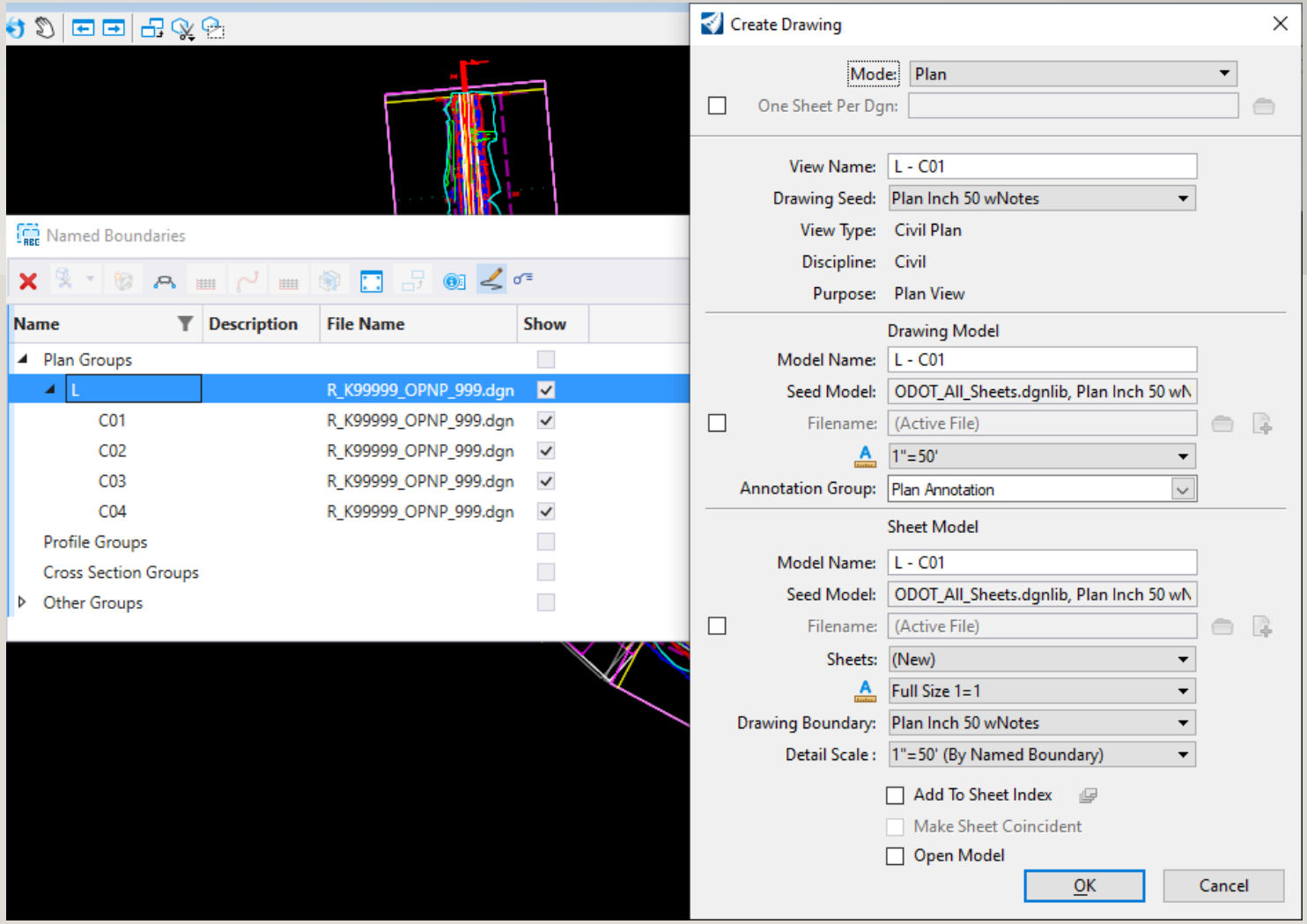
Best Practice is to make edits in the Properties dialog. Named Boundaries dialog does NOT refresh: close/reopen to see changes. Best practice to edit named boundary names PRIOR to creating drawings.

Note – The Create Drawing dialog will not display in ORD unless you click the pencil icon to make it show!

EDITING NAMED BOUNDARIES – OPENROADS DESIGNER

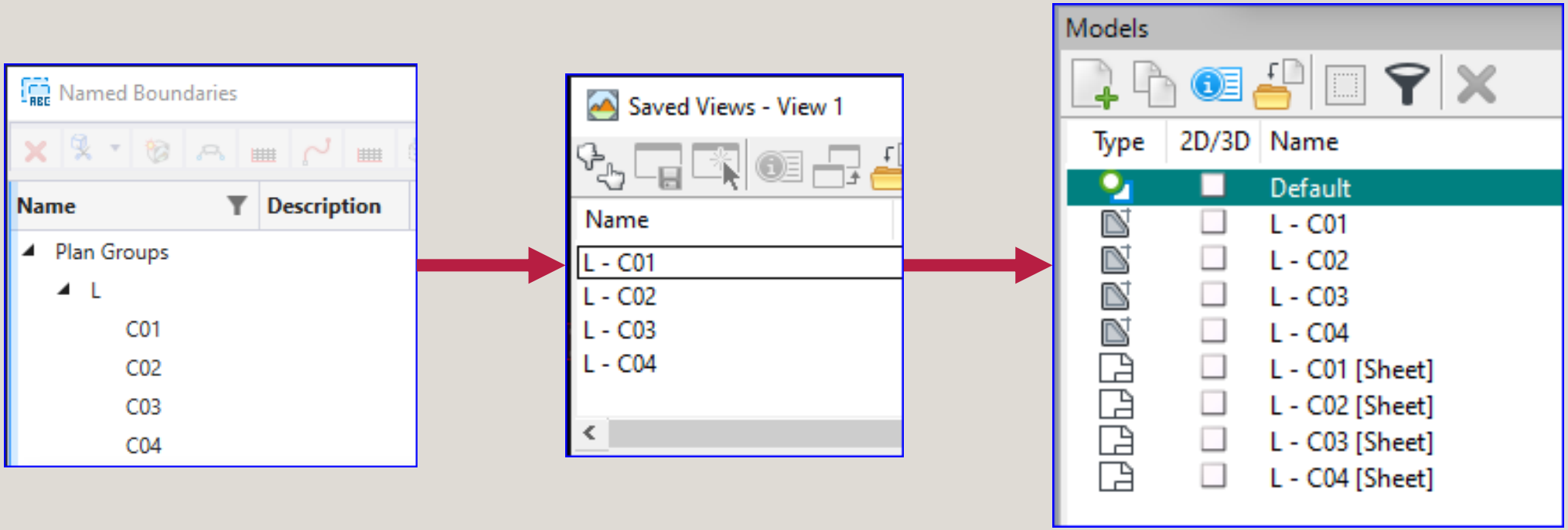
Why bother to edit the names of named boundaries?

- Models will be created by combining the Plan Group name with the Named Boundary name.
- The Plan Group is automatically named for your selected alignment
- Alignment name – named boundary name



Named boundary name is used in the Model name seed.

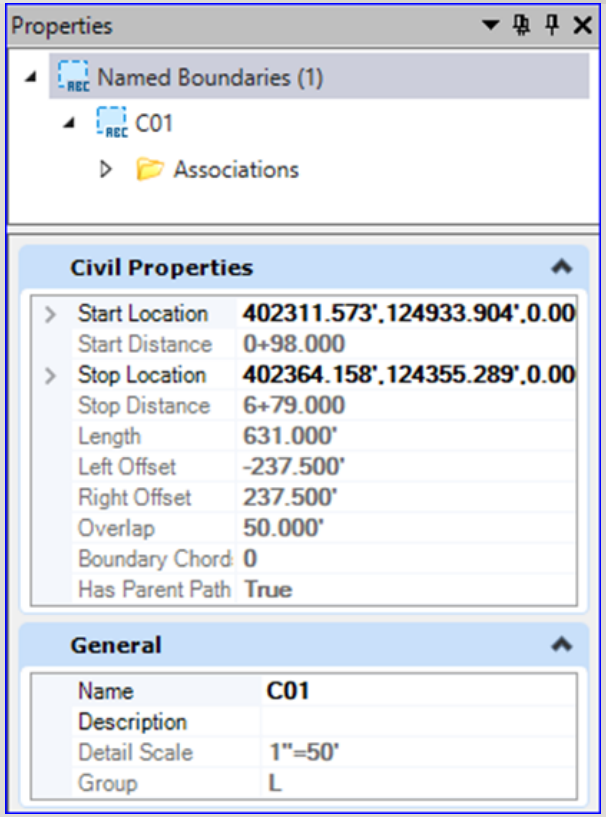
EDITING NAMED BOUNDARIES - OPENROADS DESIGNER



Named boundary names => Saved View names => Model name seed.

MOVING NAMED BOUNDARIES

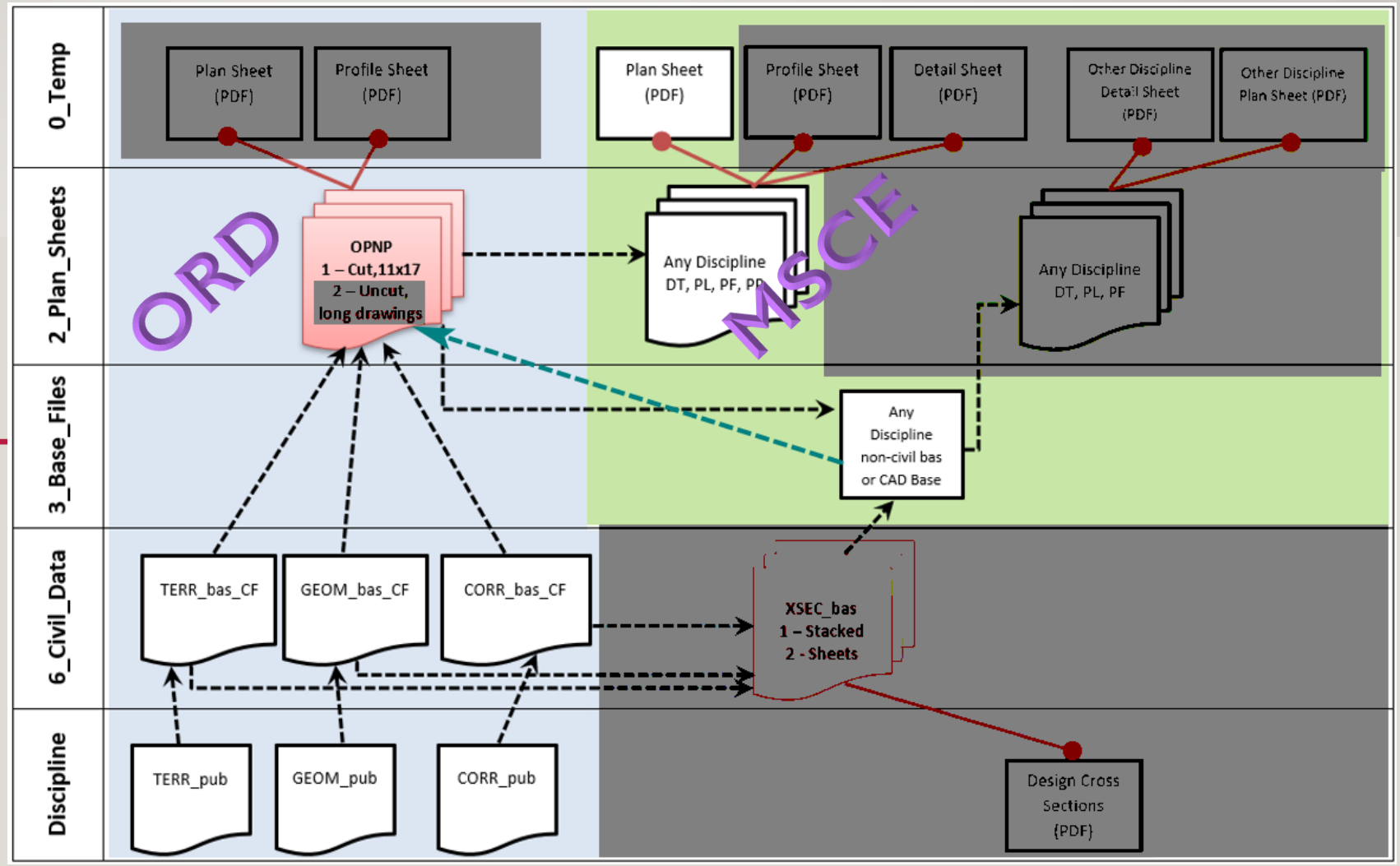
- Move at right angles to the boundary sides
- Wait until after drawings are created to alter size
- Properties that are gray – cannot be changed
  - When Civil Plan boundaries are placed, the alignment stationing (civil) is recorded in the properties, but only used for the initial placement of the boundary - there's no synchronization - if the alignment stationing changes - nothing happens to the boundaries or sheets that were cut.



DEMO

Use ORD in OPNP file; edit Civil Plan named boundaries for name; create plan sheets in a PL file.

Use MSCE in PL file to create PDF.



TOPICS

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WHEN TO USE "CIVIL PLAN" INSTEAD OF "FROM DRAWING BOUNDARY – ALONG A PATH"

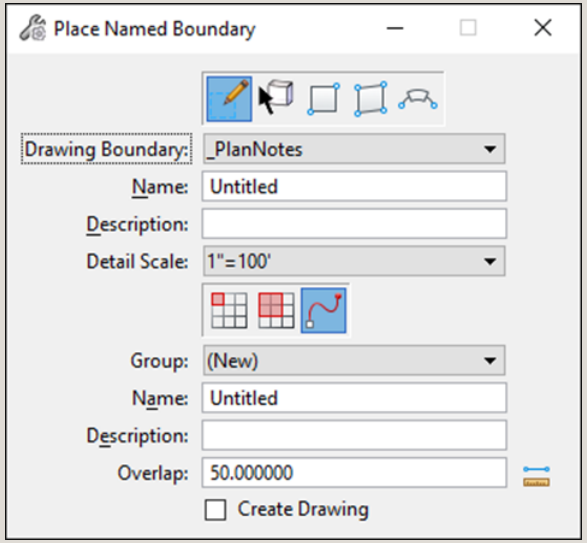
A path can be a complex chain, a referenced element, or an alignment.

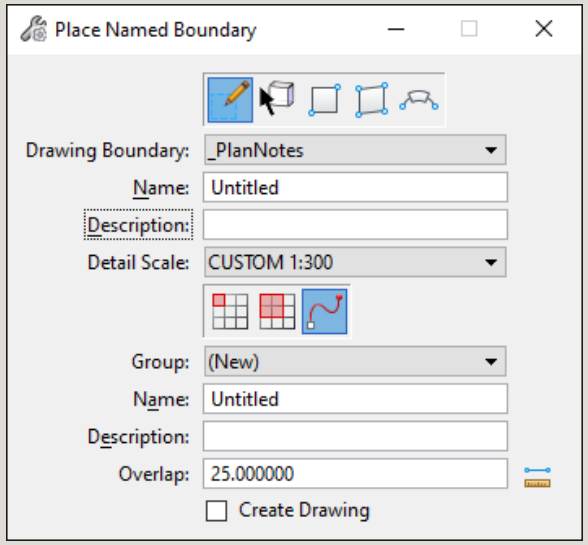
- If you are using OpenRoads Designer, use Civil Plan
- Will alignment stationing be helpful in laying out plan view sheets? Use Civil Plan
- Will you have associated profiles? Use Civil Plan

As we've seen from the demo, Civil Plan used in ORD can place boundaries similar to MicroStation using From Drawing Boundary and Along a Path.

WHAT ABOUT UNUSUAL SCALES? - MICROSTATION

- Choose a drawing boundary seed
- Set the Detail Scale to whatever you like, the drawing boundary size will automatically adjust to your chosen scale.

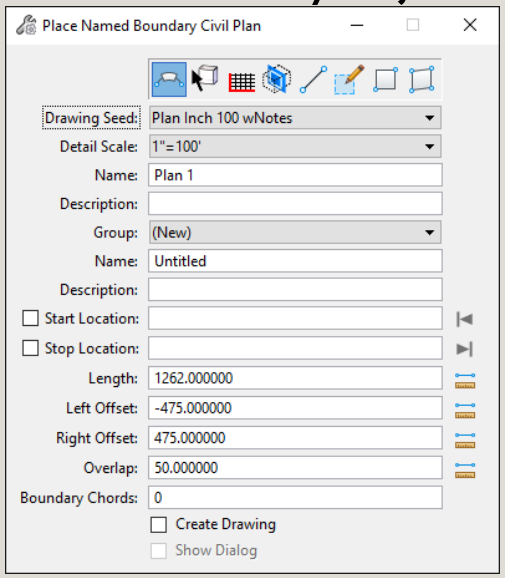


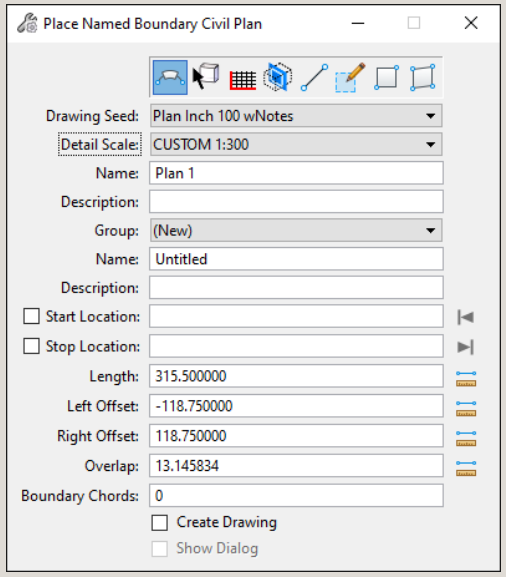


Drawing boundaries are sized according to the Detail Scale selected on the dialog. Use Custom… for any scale not listed. Multiply the scale value in inches by 12 to get the scale factor. For example, 1”=25’ is the same as 1:300 (12x25=300). Select 1”=100’ first, before setting a Custom scale.

WHAT ABOUT UNUSUAL SCALES? – OPENROADS DESIGNER

- Choose a drawing boundary seed like Plan Inch 100
- Set the Detail Scale to whatever you like, the length of the boundary, offsets (width) and overlap will automatically adjust to your chosen detail scale.





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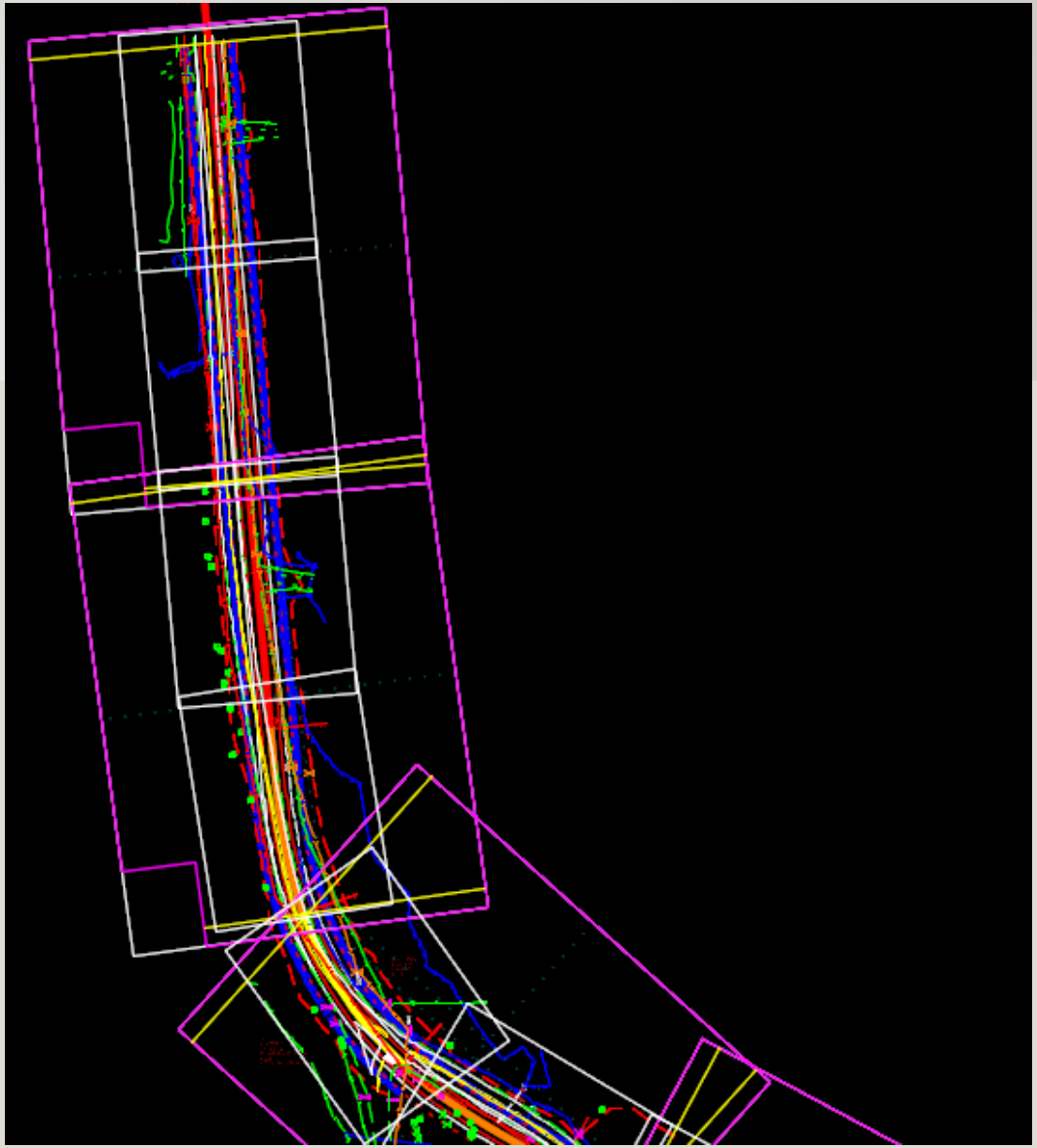
DEMO

MicroStation CONNECT & OpenRoads Designer: Place named boundaries for 1”=25’



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QUESTIONS?
A LOOK AHEAD

November 9 - Civil Profile and Alternating Plan and Profile

- What's special about Profiles?
- What are Linked Profile Named Boundaries and Do You Have to Use Them?
- Diverting Sheet models to Other DGN Files on the Create Drawing Dialog - DT, PL, PF, PP